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## ABSTRACT

The impact of receiving undergraduate student loans on attending graduate school was studied using the data base of the National Longitudinal Study of the High School Class of 1972. Information from a base-year survey conducted in spring 1972 and three followup surveys conducted in fall 1973, 1974, and 1976 was used. Approximately 20,000 students representing more than 1,000 high schools participated in the project. The hypothesis that recent college graduates with loans are less likely to attend graduate or professional school than are graduates without loans was not supported. Data indicated that graduates with loans were slightly more likely to be attending graduate or professional school than those without loans. Reasons why graduates did pursue advanced study and the influence of undergraduate loans was further examined. The influence of grade point average and socioeconomic status was also analyzed using multiple regression analysis. (SW)

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**The Impact of Student Loans on Graduate Education**

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## The Impact of Student Loans on Graduate Education

Education beyond the bachelor's level is becoming more common in American society. Whether or not this represents a social plus or is merely the result of increased competition for educational credentials is not an issue of concern for this study. Rather, the issue is whether or not the opportunity to participate in post-baccalaureate study is equally available to all qualified college graduates. Clark (In Burn, 1977) suggests that an important, new dimension to the social concern for equal educational opportunity is the need to equalize access to all levels of education including those beyond the bachelor's degree. Several authors and studies (Baird, 1973; Bender, 1972; Hanford and Nelson, 1970; National Board on Graduate Education, 1976; Sanford, 1978; 1979 ; 1980 ; Schultz, 1969; Southern Regional Office, 1968; Winkler, 1976) have raised the question that long-term indebtedness from educational loans taken out to finance undergraduate years may exert a negative influence on the borrowers' pursuit of additional education. Few studies have attempted to answer this question, however, and it remains open to conjecture. If it is true that debts tend to deter graduates from undertaking advanced study, it is time for society to be aware of this, whether or not the knowledge results in policy changes in the field of student aid.

### Data Source

The National Longitudinal Study of the High School Class of 1972 (NLS) was the data base for this study. Sponsored by the National Center for Education Statistics of the Department of Health, Education, and Welfare, the project is conducted by the Research Triangle Institute (RTI), Research Triangle Park, NC. A base-year survey conducted in spring, 1972 and three follow-up surveys conducted

in fall 1973, 1974, and 1976 comprise the information contained in the data base. Approximately 20,000 students representing more than 1,000 high schools participated in the project, and the response rate to the various questionnaires has been 100 percent. A more complete description of the NLS Survey with a detailed description of the instruments, sample, methodology, and data collection procedures can be found in the NLS User's Manual (Levinsohn, Henderson, Riccobono, Moore, 1978). Only those NLS participants who had received a bachelor's degree by the time of the third follow-up (October, 1976) were included in this study (N=3, 136).

### Findings

#### Attending Graduate School

If there is a relationship between having loans and attending graduate or professional school, it seems likely that graduates with loans who do not attend graduate school may do so because they do not wish to increase their debts or because they wish to reduce their debts before undertaking additional study which might require new loans.

Hypothesis 1: Recent college graduates with loans are less likely to attend graduate or professional school than are graduates without loans.

As shown in Table 1, this hypothesis was not supported and, in fact, the opposite relation was true: graduates with loans are slightly more likely to be attending graduate or professional school than graduates who did not have loans as undergraduates. Note should be made here that achieving statistical significance was greatly enhanced by the large size of the sample. While this need not make one apologetic for using a large sample or for achieving statistical significance, it does call for a certain amount of restraint in interpretation of the findings. Most of the findings in this study are significant for what they do not support rather than for the small relationships reported.

Because it seemed reasonable that the amount of a graduate's debt might influence any decision concerning advanced study, Table 2 examined the relationship between amount of loan debt and attending graduate school. As can be seen in Table 2, the positive relationship between having loans and attending graduate school held for every category of amount of loan in that more graduates with loans were attending graduate school than were graduates without loans.

In order to clarify the relationship between loans and attending graduate school and to reduce the chance that additional factors might have influenced the relationship, graduates' cumulative grade point average (GPA) and family social economic status (SES) were used as controls. GPA was used because graduates with high GPA's may have been more likely to get scholarships, and not loans, and may have been more likely to pursue graduate study. SES was used because lower SES graduates were more likely to have needed and gotten loans as undergraduates and may have been somewhat less likely to attend graduate school.

Multiple crosstabs using the three categories of SES as controls showed that the positive relationship between loans and graduate school was statistically significant only for the middle SES group of graduates. This was true when both having had loans and amount of loans were used against attendance at graduate school. When partial correlations were used, the first-order partial controlling for SES produced  $r = 0.07$ ,  $p < .0001$ , for the relationship between amount of loan and attendance at graduate or professional school. Higher percentages of graduates indicated attendance going from the low to high SES categories, but this held for both those graduates who had loans and those who did not have loans. The preliminary indication, then, was that loans do not appear to have a differential impact on low SES students as one might expect.

When the five categories of GPA were used as controls in multiple crosstabs, the findings showed a negative relationship between loans and attendance ( $r = -0.21$ ,  $p < .05$ ) for the lowest category of GPA (1.75-2.24), a positive relationship

( $r = 0.08$ ,  $p < .01$ ) for the 3.25-3.74 category, and insignificant relationships for the other three categories of GPA. Partial correlation analysis showed a first order partial of 0.06,  $p < .01$ , when controlling for GPA. A second order partial, controlling for both SES and GPA, showed the positive relationship between loans and attendance still in evidence ( $r = 0.07$ ,  $p < .001$ ).

The results from a multiple regression analysis on attending graduate school are shown in Table 3. Amount of loans was the first student aid variable to enter the analysis (grants and work were added as controls) but the contribution of loans to the analysis cannot be considered particularly important in helping to explain differences in attending graduate or professional school.

#### Reasons for Not Attending Graduate or Professional School

Another way to explore the possible relationship between loans and graduate school is to look at the reasons given by graduates who do not enter graduate or professional school. Ideally, one might wish to have such graduates respond to specific questions, such as, "I did not attend graduate school because I did not want to borrow more money," but that was not quite possible with the NLS data. There were two reasons listed in the data for not attending graduate school, however, which provided indirect means for examining the relationship: 1) I have no interest in graduate or professional education, and 2) I cannot financially afford to attend graduate school at the present time. The first statement may not really have much to do with whether or not a graduate borrowed money for undergraduate expenses, but it suggested a proxy variable for interest in education as might be affected by having had to borrow money to attain the bachelor's degree. Particularly when used with a graduate's educational expectations expressed at the beginning of the undergraduate experience did this variable have the potential for determining if borrowing for college were related to changes in educational plans. Rather than a direct examination of changes in educational plans as related to loans, the intent was to explore the relationship between loans and interest

in graduate school for graduates not attending graduate school. Original educational plans were used as a control variable in that they conceivably could affect both assuming loans and interest in graduate school because persons strongly interested in graduate or professional education about the time of high school graduation may have been more likely to borrow money to go to college and may have been more likely to express an interest in graduate education even if they were not currently enrolled.

Hypothesis 2: Controlling for 1972 educational plans, graduates with loans who are not attending graduate school are more likely to say they have no interest in advanced study than other graduates.

Table 4 indicates the responses of graduates who were not attending graduate school to the reason for not attending, "I have no interest in graduate or professional education." Contrary to expectations, graduates who had loans as undergraduates were less likely to express a lack of interest in attending graduate school. The same relationship was found when amount of loans was used as the independent variable, and, when controlling for 1972 educational plans through partial correlation, the first order partial between loans and no interest was  $-0.07$ ,  $p < .01$ . Thus, hypothesis two was not supported.

The second statement mentioned above, "I cannot financially afford to attend graduate school at the present time," was used to indicate graduates' perceptions of their situation rather than measured financial inability to attend graduate school. The statement was used to explore the hypothesized relationship between having loans and feeling that one cannot afford advanced study.

Hypothesis 3: Of those graduates not attending graduate or professional school, graduates with loans will be more likely to list their not being able to afford it as a reason for not attending than other graduates without loans.

This hypothesis was supported by the data as Table 5 shows. Because it seemed likely that graduates who borrowed to finance their undergraduate education also may have been more likely to have insufficient resources for financing advanced

study, this finding was not surprising. However, if lack of resources were behind graduates' (with loans) reasons for agreeing with this statement instead of negative motivational features of having loan debts as alluded to above, then controlling for SES should clarify the issue somewhat. Multiple crosstabs using SES as a control variable produced the same significant findings as did partial correlation analysis with SES as a control ( $r = 0.20$ ,  $p < .001$ ). Regardless of graduates' SES, those with loans were significantly more likely to say that they were not attending graduate school because they felt they could not afford it.

Graduates not attending graduate or professional school because they cannot afford it may have been in this situation because they were unable to obtain financial assistance to attend graduate school. Thus, their agreement with the statement--not attending because I cannot afford it--may have reflected an inability to procure financing rather than an influence of financing previously received for undergraduate education. In order to better understand the issue, similar analyses were run using only those graduates who said they had applied for financial assistance from graduate or professional schools but were not attending. Because only a small number of graduates ( $N=77$ ) in the NLS data fit into this category, the results of the analyses were not conclusive and statistical significance at the 0.05 level was not always achieved. Multiple crosstabs comparing having had loans and amount of loans received with graduates' responses to "not attending because cannot afford it" showed no difference between those graduates who had been offered financial assistance and those who had not. Hence, the findings suggested that graduates who had received aid as undergraduates and were not attending graduate or professional school were more likely than other graduates to say that they were not attending because they cannot afford it regardless of whether or not they applied for or were offered financial assistance.

### Reasons Why Graduates Do Pursue Advanced Study

Because it seemed possible that some graduates with loans might have been encouraged to attend graduate school both because their loans would be deferred while in attendance and because they might see graduate education as the road to a higher paying job, the relationship between loans and reasons for attending graduate school was explored. An examination of this relationship also was indicated by the earlier finding that graduates with loans were more likely to be attending graduate school; one wondered why this might be true. While the NLS Survey did not allow for a direct test of the basic question being posed (for instance, asking all graduates regardless of their intentions to pursue advanced study to rate the importance of reasons for seeking a graduate degree), the data did allow for an indirect test by examining reasons for attending given by those graduates who were attending graduate or professional school. The basic rationale was that college graduates may see advanced study as a way to increase their earning power so that the loan repayment would be more manageable. Thus, as opposed to the theory presented earlier that graduates with loans would avoid graduate school because of their loans, the suggestion now was that the loans might actually be a slight inducement to attend graduate school for certain graduates who saw additional education as the way to a higher salary. Of those reasons listed in the NLS third follow-up questionnaire, the most relevant one to this study was the importance of a better salary.

Hypothesis 4: Of those graduates attending graduate or professional school, graduates with loans are more likely to consider a better salary as a more important reasons for attending than other graduates without loans.

Table 6 shows that the data supported this hypothesis when amount of loans was used as the independent variable. The relationship was not strong and it was insignificant with Had Loans/No Loans and when SES was used as a control.

### Part-time Attendance

The positive relationship between having had loans as an undergraduate and attending graduate school may be mediated, to some extent, by graduates attending part-time while holding down full or part-time jobs. Graduates with loans may wish to begin paying off their debts by working, and they may wish to avoid taking on additional educational loans which full-time study might necessitate. Such persons may feel that they can take a course or two on a part-time basis without sacrificing their desire to limit their debts.

Hypothesis 5: Of those graduates attending graduate or professional school, graduates with loans are more likely to be attending part-time than other graduates.

The data did not support this hypothesis as neither having had loans ( $r = 0.02$ ) nor amount of loans ( $r = 0.04$ ) showed any significant relationship with attendance status.

### Summary

Contrary to the hypothesized negative relationship between receiving loans for undergraduate education and attending graduate or professional school, this study showed no such relationship and actually found a slight positive one. While there are some important constraints on the findings of the study--most notably the short time period between graduation and the survey--the major conclusion reached was that loans do not exert a negative impact on the lives of college graduates who borrowed money to finance their bachelor's degree.

The implications of this study suggest that the negative relationships between loans and achievement (Astin, 1977; Knight, 1968) and between loans and persistence (Astin, 1975), reported elsewhere as noted, do not appear to have any direct bearing on students who actually graduate from college. Also, the findings lend support to current student financial aid policies which emphasize "self-help" through loans (and work) (Carnegie Council, 1979).

To conclude with a note of caution, one must remember that this study examined the short-term relationship between loans and the pursuit of graduate or professional education. Whether or not one feels that the long-term relationship would be any different (after ten years, for example), this was not studied.

Table 1  
Percentage Distribution of Attendance at Graduate  
or Professional School by Having Had Loans

| Attendance at<br>Graduate School | Had Loans |          | Total |
|----------------------------------|-----------|----------|-------|
|                                  | No        | Yes      |       |
| No                               | 77.9      | 73.4     | 76.2  |
| Yes                              | 22.1      | 26.6     | 23.8  |
|                                  | (n=1665)  | (n=1025) |       |

Note.

Chi Square = 6.93  $p < .01$   
Gamma = 0.12

Eta = 0.05  
Pearson's R = 0.05  $p < .01$

Table 2

Attendance at Graduate or Professional School by Amount of Loans

| Amount of<br>Loan | Attendance at Graduate School |            |
|-------------------|-------------------------------|------------|
|                   | No                            | Yes        |
| None              | 1297 (77.9) <sup>a</sup>      | 368 (22.1) |
| < \$500           | 75 (72.1)                     | 29 (27.9)  |
| \$500-999         | 94 (74.6)                     | 32 (25.4)  |
| \$1000-1999       | 201 (74.7)                    | 68 (25.3)  |
| \$2000-4999       | 297 (73.0)                    | 110 (27.0) |
| > \$4999          | 85 (71.4)                     | 34 (28.6)  |
| Total             | 2049 (76.2)                   | 641 (23.8) |

Note.

Chi Square = 7.93  
Gamma = 0.10

Eta = 0.05  
Pearson's R = 0.05  $p < .01$

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<sup>a</sup>Figures in parentheses denote percentages by amount of loan.

Table 3

Regression Analysis of Attending Graduate or Professional School with  
Variable Entered in Order of Significance

| Variable                | Multiple R | R <sup>2</sup> | Simple r | Beta   |
|-------------------------|------------|----------------|----------|--------|
| Educational Plans, 1973 | 0.366      | 0.134          | 0.366    | 0.295  |
| GPA                     | 0.398      | 0.158          | 0.245    | 0.159  |
| Sex (Women)             | 0.405      | 0.164          | -0.105   | -0.072 |
| Aptitude                | 0.408      | 0.167          | 0.162    | 0.054  |
| Amount of Loans         | 0.411      | 0.169          | 0.044    | 0.037  |
| Amount of Grants        | 0.413      | 0.170          | 0.086    | 0.035  |
| SES                     | 0.414      | 0.171          | 0.069    | 0.041  |
| Amount of Work          | 0.414      | 0.172          | 0.000    | -0.030 |
| Aid (Yes)               | 0.415      | 0.172          | 0.061    | 0.030  |
| Race (White)            | 0.415      | 0.172          | 0.020    | -0.016 |

Note.

The means, standard deviations, and correlation coefficients  
are available from the author.

Table 4

Percentage Distribution of Not Attending Graduate or Professional  
School Because of the Reason, "I have no interest," by Having Had  
Loans

| No Interest in<br>Graduate Education | Had Loans |         | Total |
|--------------------------------------|-----------|---------|-------|
|                                      | No        | Yes     |       |
| Disagree                             | 85.0      | 90.7    | 87.1  |
| Agree                                | 15.0      | 9.3     | 12.9  |
|                                      | (n=1297)  | (n=752) |       |

Note.

Chi Square = 13.36  $p < .001$   
Gamma = -0.27

Eta = 0.08  
Pearson's R = -0.08  $p < .0001$

Table 5

Percentage Distribution of Not Attending Graduate or Professional School Because of the Reason, "I cannot afford it," by Having Had Loans

| Cannot Afford It | Had Loans |         | Total |
|------------------|-----------|---------|-------|
|                  | No        | Yes     |       |
| Disagree         | 63.6      | 41.9    | 55.6  |
| Agree            | 36.4      | 58.1    | 44.4  |
|                  | (n=1297)  | (n=752) |       |

Note.

Chi Square = 13.36  $p < .001$   
Gamma = -0.27

Eta = 0.08  
Pearson's R = -0.08  $p < .0001$

Table 6

Percentage Distribution of Attending Graduate or Professional School for a Better Salary by Amount of Loans

| Amount of Loans | Better Salary  |           |               |              |         |
|-----------------|----------------|-----------|---------------|--------------|---------|
|                 | Very Important | Important | Not Important | Not a Factor |         |
| None            | 21.2           | 44.0      | 20.6          | 14.3         | (n=364) |
| < \$500         | 32.1           | 32.1      | 14.3          | 21.4         | (n= 28) |
| \$500-999       | 18.8           | 43.8      | 18.8          | 18.8         | (n= 32) |
| \$1000-1999     | 16.2           | 45.6      | 27.9          | 10.3         | (n= 68) |
| \$2000-4999     | 30.3           | 46.8      | 17.4          | 5.5          | (n=109) |
| > \$4999        | 26.5           | 44.1      | 11.8          | 17.6         | (n= 34) |
| Total           | 22.8           | 44.1      | 20.0          | 13.1         |         |

Note.

Chi Square = 19.65  
Gamma = -0.10

Eta = 0.13  
Pearson's R = -0.08  $p < .05$

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